

many miles of the sea-board in the Surat district, at present unutilised drifting sandy wastes, can be converted into profitable casuarina plantations.

185. The Egyptian date palms are not doing well anywhere, and the Australian eucalypti do not find the Bombay Presidency so favourable to their growth as the Nilgherries apparently are. It is not desirable for the Forest Department to waste money upon the experimental cultivation of exotics when the local flora contains such very numerous kinds of beneficent, beautiful and valuable trees.

#### 10.—EARLY THINNINGS, REMOVAL OF INFERIOR SPECIES, . CUTTING OF CREEPERS, &c.

186. The forest guards in most divisions are provided with a Maráthi koita, a kind of sickle or curved knife, wherewith to cut creepers; and this they are required to undertake in the forests of their beats without any paid assistance.

187. A species of loranthus, a parasitic shrub, is found growing on the branches of many trees of various kinds in the Thána forests: it affects chiefly teak trees, and attaches itself to the leading shoot as well as to side branches, and its roots penetrate the bark to the cambium layer with which they contract an organic adhesion so as to derive nourishment from the sap of the tree. The loranthus impoverishes and eventually kills the limb upon which it has established itself; it flowers the greater part of the year, and its berry is round about the size of a pea: birds and the natural dropping of the seeds cause its spread. The Collector of Thána drew the attention of the Conservator to the prevalence of loranthus in the Thána forests, and measures are being undertaken to exterminate this pest by cutting out all trees, which have been attacked by it in the coupes of the season, and by searching all closed forests (exploited coupes) annually with a view to lop off the limb of any tree which may have provided a home for the loranthus.

188. The eradication of prickly-pear, *Opuntia dillenii*, natural order Cactææ, from Reserved Forests in several divisions, has been carried on with vigour. This pestiferous plant, which is a native of Brazil, and now so common about most of the Deccan villages where it provides a safer refuge for wild pig, snakes and vermin of sorts in its dense impenetrable tangled masses, which form an unbroken cover over acres of ground, was introduced into Western India, so native tradition explains, by a Maráthi Sirdár Dábhádé by name, who brought a few seeds of it in his palanquin from Delhi, and his gift has been as noxious to the Deccan as was the shirt to Hercules. It is a very valuable plant for the reboisement of the barren and denuded uplands of the Deccan, for it establishes itself upon the most stoney soilless places, and it refuses to be turned out when it has once taken root, save at great cost and labour; filth and debris are arrested by it and accumulate round it, and its own roots open out the pores of the earth and form soil. The natives call it the nágphana nivadung; armed plants such as the *euphorbia nerrifolia*, *nivulia*, &c., are likewise generally termed "nivadung" in the vernacular, with Sabri and Thor added to denote their species: but the prickly-pear is called the nágphana nivadung because its oblate, flat, fleshy joints resemble the expanded hood of the cobra. It is a very common mistake among officials and others to speak, and to write, of the Sabri, *euphorbia nerrifolia*, as cactus, which it has no claim to be, and thus confusion is caused. The prickly-pear is botanically called the *cactus indicus* by Roxburgh in his *Flora Indica*. The *opuntia dillenii* is enormously aggressive with its very great power of spreading, for the joints strike root wherever they may find themselves carried and dropped by man, or by the wind or by water, and the seeds are deposited in all directions by birds, which eat the fruit, and when once this plant has been introduced upon a boundary line as a living hedge, an office it discharges very effectively, it very soon invades the property it was originally brought to protect. New growth, seedlings and shoots, come up here, there and everywhere, and as it is very gregarious it soon occupies land to the exclusion of superior vegetation and of grasses. It has to be cut down limb by limb, levelled to the ground, then the roots have to be dug up, and the whole carcass buried under several feet of earth; this is the most

effective method of eradicating it; simply cutting it down, drying the severed parts in the sun, and burning them, which is a costly proceeding, will not always destroy the persistent vitality of the plant. The nine-lived cat would have no chance against the prickly-pear in a competition against death by violence. In the East Khándesh division, where there is not fortunately much prickly-pear, the beat guards dug it out wherever it showed itself. In the Násik division an area of 670,248 square feet within the Raolas Reserved Forest in the Niphád range was cleared of prickly-pear at a cost of Rs. 103-5-0. In the Ahmednagar division 16,179 cart-loads of prickly-pear were removed from 366 acres 26 gunthas of bábul forests in different ranges, and the material was buried in nálas and rifts under two feet of earth, the cost of the operation amounting to Rs. 1,034-8-0.

189. In the Poona division ten gangs of six men each have been engaged partly as famine work for varying periods in the Haveli, Indápur and Bhimthadi ranges in digging out prickly-pear and trimming the hedges of this interesting plant, wherever it was getting beyond bounds. 73½ acres were cleared entirely and 7,131 cart-loads of the prickly-pear were destroyed. Forest guards removed all young and fresh growth from the forests of their beats. Rs. 1,960-1-3 were expended in the division.

190. Prickly-pear was removed from the Burlé bábul reserve in the Tásgaon range by hired labour, at a cost of Rs. 198-12-6; and creepers were severed and killed by forest guards in the forests of the western gháts in the Sátára division.

191. All the forest guards of the Sholápur division are equipped with bill hooks to keep their reserves free of creepers and also to remove freshly intruding prickly-pear, and paid labour has been employed where the forest guards were unable to cope with the evil. This statement shows the work performed:—

No.	Ranges.		Square Feet.	Cost.		
				Rs.	a.	p.
1	Sholápur	...	30,290	154	14	0
2	Mádha	...	18,074	86	1	6
3	Karmála	...	69,600	45	3	6
4	Málsiras	...	27,546	29	13	6
	Total	...	145,510	316	0	6

192. The forests of Khánbor and Singalkas in the Dángs were treated for creeper cutting; all the valuable timber trees which are of exceptionally promising growth were freed from the embraces of the large climbers, which were abundant and obstructive: the operation cost Rs. 7-9-0.

## 11.—COMMUNICATIONS AND BUILDINGS.

### (a) ROADS AND BRIDGES.

193. The Divisional Forest Officer, West Khándesh, spent a small sum of Rs. 14-8-6 in repairing the Kalámbari road in the Pimpalner range, and the Divisional Forest Officer, Surat, executed the usual repairs to the main road in the Dángs extending from Waghái to near Dhuda, a distance of 36 miles, and to the branch road that ascends the Sarwar plateau from Pimpri and descends into the Purna valley at Kalibel, and from thence goes *via* Sajukpada on the Gira across the Rupgad hills, a distance of about 26 miles. The crossing of the Kapri river near Bibabari was cleared of boulders and made smooth and easy for the passage of timber laden carts. All the bridges in the lower Dángs, the planking of which had become rotten, worn out and unsafe, and the masonry work of which was in bad condition, underwent thorough repairs, and the bridge at Kasadpada near Pimpri on the main timber road, which had been burnt down in the hot weather, was rebuilt.